



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/002,012	12/05/2001	Hiroshi Sekine	XA-9591	3034

7590 10/21/2003

Miles & Stockbridge P.C.
Suite 500
1751 Pinnacle Drive
McLean, VA 22102-3833

EXAMINER

BINDA, GREGORY JOHN

ART UNIT	PAPER NUMBER
----------	--------------

3679

DATE MAILED: 10/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/002,012

Applicant(s)

SEKINE, HIROSHI

Examiner

Greg Binda

Art Unit

3679

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 6 and 8-10 is/are pending in the application.
- 4a) Of the above claim(s) 1-3 and 6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 3679

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Election/Restrictions

2. Claims 1-3 & 6 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election of Species IX (shown in Fig. 10) was made **without** traverse in Paper No. 8.

Drawings

3. Replacement drawings were received on Sep 2, 2003. These drawings are approved.

Claim Rejections - 35 USC § 103

4. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kayser, US 3,138,942. Figs. 1 & 2 show a cross joint 10 adapted to be used in a steering apparatus, the joint comprising: a yoke (see "furcation of a universal joint" in col. 2, lines 67 & 68) formed with a bearing hole (see "openings" in col. 1, line 13); a needle bearing 16, 24 positioned in the bearing hole, the needle bearing including a bearing cup 16 and rollers 24 provided therein; and a spider shaft 14, an end portion of which is fitted into the bearing hole through the needle bearing 16, 24. Figs. 1 & 2 show the rollers 24 are interference-fitted on an end periphery 27 of the end portion of the spider shaft 14. In col. 3, lines 62-65, the rollers 24 are disclosed as axially movable, but Kayser does not expressly disclose that the amount of movement be equal to 0.6 mm or larger. However, it would have been obvious to one having ordinary skill in the art at the time the

Art Unit: 3679

invention was made to have the amount of movement be equal to 0.6 mm or larger, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Killing*, 895 F.2d 1147, 14 USPQ2d 1056.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kayser as applied to claim 8 above, and further in view of Takabe, US 2001/0007832. In col. 2, lines 3-7, Kayser discloses that a lubricating agent fills the interior of the needle bearing 22, 24, but Kayser does not expressly disclose that an extreme-pressure additive is added to the lubricating agent. In paragraphs 0011-0013, Takabe discloses adding an extreme-pressure additive to a lubricating agent in order to provide a lubricating agent that will exhibit durability under severe conditions, will keep suitable hardness with little change in consistency at high temperature, and exhibit better water resistance compared with other lubricants. It would have been obvious to one of ordinary skill in the art to modify the cross joint of Kayser by adding an extreme-pressure additive to the lubricant in order to provide a lubricating agent that will exhibit durability under severe conditions, will keep suitable hardness with little change in consistency at high temperature, and exhibit better water resistance compared with other lubricants.

6. Claims 8 & 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mangiavacchi, US 4,710,150. Mangiavacchi discloses a cross joint adapted to be used in a steering apparatus, the joint comprising a yoke (see "a universal joint" in col. 2, lines 17) formed with a bearing hole. The figure shows the joint comprises: a needle bearing 3, 4 to be positioned

Art Unit: 3679

in the bearing hole, the needle bearing including a bearing cup 3 and rollers 4 provided therein; and a spider shaft 1, an end portion of which is fitted into the bearing hole through the needle bearing 3, 4. The figure shows the end portion of the spider shaft is formed with a hole (see also "cavity" in col. 2, line 29) that is "bottomed" by element 5. The figure shows the rollers 4 are interference-fitted on an end periphery of the end portion of the spider shaft 1. The figure shows a gap or space below the rollers 4, which indicates the rollers 4 are arranged to be movable in an axial direction, but Mangiavacchi does not expressly disclose that the amount of movement be equal to 0.6 mm or larger. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the amount of movement be equal to 0.6 mm or larger for the same reason noted in item 4 above.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mangiavacchi as applied to claim 8 above, and further in view of Takabe. In col. 2, lines 27 & 28, Mangiavacchi discloses that a lubricating agent fills the interior of the needle bearing 3, 4, but Mangiavacchi does not expressly disclose that an extreme-pressure additive is added to the lubricating agent. However, it would have been obvious to one of ordinary skill in the art to modify the cross joint of Mangiavacchi in view of Takabe by adding an extreme-pressure additive to the lubricant for the same reason noted in item 5 above.

Response to Arguments

8. Applicant's arguments filed Sep 2, 2003 have been fully considered but they are not persuasive. Applicant argues that Kayser's disclosure that the rollers 24 are free to move

Art Unit: 3679

“radially” (i.e. “an axial direction” as defined in the instant application) is evidence that the cross joint of Kayser fails to make obvious the claim invention. However, it is not clear why such a disclosure would provide such evidence given that in the claimed invention (see claim 8, lines 11+) the needle rollers are recited as being free to move in “an axial direction”.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fisher discloses a cross joint.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Art Unit: 3679

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Greg Binda whose telephone number is (703) 305-2869. The examiner can normally be reached Monday through Thursday from 9:30 am to 7:00 pm. The examiner can also be reached on alternate Fridays. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Browne, can be reached on (703) 308-1159. The fax phone number is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-2168.



Greg Binda
Primary Examiner
Art Unit 3679